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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/913,338	01/02/2002	Roger Giles		8328

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EXAMINER

GURZO, PAUL M

ART UNIT PAPER NUMBER

2881

DATE MAILED: 03/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/913,338

Applicant(s)

GILES, ROGER

Examiner

Paul Gurzo

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 February 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 11 February 2003 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bajic (5,756,994) and further in view of Bajic (GB 2324906 A, hereinafter '906').

Regarding claim 1, Bajic teaches an ion source for a mass spectrometer, wherein an atmospheric pressure sample ionizer is operable at atmospheric pressure (col. 3, lines 49-50). The ion source comprises an entrance aperture (10), an exit aperture (11) and an exhaust port (6) all arranged to receive sample ions provided by the ionizer entrained in a gas flow and exit them to the mass spectrometer (col. 6, lines 14-42 and Fig. 1). A vacuum pump is in communication with the exhaust port to hold the pressure at a pressure intermediate the operating pressure of the mass spectrometer. The exit aperture is located in the flow passage between the entrance aperture and exhaust port. The passage is shaped to cause all the gas and sample ions to flow along trajectories (14) within a distance "d" of the exit aperture. Since the diameter of the exit aperture is 0.5, 1.0, or 1.5 mm and "d" is about 1 mm., "d" is less than five times the diameter of the exit aperture. Bajic fails to teach having no line of sight between the entrance and exit apertures, but '906' states that there is no line of sight path between the entrance and exit apertures (page 5, lines 24-26 and Fig. 1). Therefore, it would have been obvious to one of

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ordinary skill in the art at the time the invention was made to incorporate an ion source for a mass spectrometer with no line of sight to prevent undesirable streaming of ions from the entrance to exit apertures.

Regarding claims 2-6, '906' depicts the claimed bend between the entrance and exit apertures. It also depicts the first and second passages communicating with each other and intersecting at an angle of approximately 90 degrees to each other. The first and second passages have a length substantially larger than their respective widths (Fig. 1). It is an obvious matter of design choice to modify the applied prior art to make the chamber between the entrance and exit apertures of a smaller sectional area than the remainder of the interface chamber as well as having the passage adjacent to the entrance aperture of a smaller sectional area than the exit aperture passage so that the net flow of the sample ions is throttled.

Regarding claims 7 and 8, Bajic teaches the exit aperture comprising a frusto-conical hole as well as a corresponding frusto-conical insert member, coaxially aligned with the hole, having a bore therethrough to permit passage of sample ions (Fig. 1, ref. 8, 12 and 13). The insert member (8) is disposed between the body (2) and conical member (12) to electrically insulate it from the body (2) (col. 6, lines 21-24).

Response to Arguments

Applicant's arguments filed January 16, 2003 have been fully considered but they are not persuasive. Applicant claims that there is no motivation to combine the teaching of Bajic I and Bajic II, and, further, that Bajic II does not teach passing substantially all the gas and entrained ions from the entrance aperture to the exit aperture.

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In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, both prior art teach that the object of their inventions are to provide an improved electrospray ion source having better sensitivity than prior sources and to provide an improved method of ionizing a solute in a solution by electrospray (Bajic I col. 2, line 61 - col. 3, line 7 and Bajic II Abstract).

In response to the applicant's argument that Bajic II does not teach passing substantially all the gas and entrained ions from the entrance aperture to the exit aperture, Bajic II explicitly states an interface chamber having an entrance orifice located to collect desired sample ions with entrained gas and droplets into the interface chamber from said sample ions of said sample ionizer, an exit orifice for sample ions to exit the interface chamber to the mass spectrometer, and flow splitting means arranged to favor the collection of sample ions from the interface chamber by said exit orifice (page 7, lines 5-12). Further, Bajic II depicts in Fig.3 the exit orifice (7) is located in the flow passage between the entrance aperture (5) and the exhaust pump (19).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul Gurzo whose telephone number is (703) 306-0532. The examiner can normally be reached on M-Thurs. 7:30 - 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Lee can be reached on (703) 308-4116. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

PMG
February 27, 2003



JOHN R. LEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800